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## Original.

### SHOCK PRODUCED BY GENERAL ANESTHESIA WITH RELATION TO DISTURBANCES OF THE BLOOD AND GASTRO-INTESTINAL TRACT.*†

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Shock as a result of simple anesthesia in the absence of trauma, hemorrhage or fright has not been carefully worked out. The term "shock" is unscientific. It is the clinical expression for a group of symptoms, the result of failure of important functions of the body, as those of circulation, respiration, excretion and secretion, and general metabolism. A lowered bodily temperature is a more or less constant phenomenon. Shock is intimately connected with the nervous mechanism.

In studying shock from anesthesia it is not only essential to consider the specific toxin of the anesthetic used, but the resulting toxic bodies generated through the immediate or more remote influence of a general anesthesia. Shock can not, therefore, be expressed in a single definition. The phenomena of shock are so complex that in experimental work on animals it is necessary to study each condition separately, and compile the associated facts obtained and compare them with clinical experience.

The present paper deals with (1) the consideration of the anesthetic as a cellular poison; (2) the disturbances of function as a result of the anesthesia (3) the toxins that are evolved either from the direct effect of the anesthetic or the disturbances of certain functions of the body.

In experiments on dogs with chloroform and ether, we have not determined the direct toxic effect on cells, as this has been done by numerous observers. Sabaarth, in 1866, reported 119 cases of death from chloroform anesthesia, only 48 of which were due to the toxic effects of chloroform. This led Nothnagel to study the pathologic effects of chloroform and ether on the various cells of the body. Rabbits were chiefly used, and the anesthetics were employed by inhalation, by subcutaneous and intraperitoneal injections, and by direct introduction into the stomach. Doses of different size and at varying intervals were employed. The pathologic findings

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showed overwhelming evidence of the specific toxic effects of chloroform and ether on cells, whether the animal died from anesthesia or not. Waller's research on isolated nerves showed that their electrical reaction is suspended, or ceases permanently, according to the percentage of chloroform used,and the time of exposure.

In experiments on animals I have frequently noticed that some animals would show evidences of shock more readily than others of the same species, and that even with the most trivial manipulations under anesthesia the animals would die during the same night, the following day or the second day after. They would show all the evidences of shock, as a fall in blood pressure, respiratory failure, lowered temperature, loss of sensation to a greater or less degree, and failure of the excretory organs. This led to the investigation of the question of shock from anesthesia without surgical operation.

METHODS OF OBSERVATION.

Dogs were selected, as they appear more resistant to the after-effects of anesthesia than rabbits and guinea-pigs. Chloroform and ether were used; sometimes they were combined or used alternately. The animal's temperature, pulse and respiration were observed before, during and after the anesthesia, and they were observed sometimes at intervals for forty-eight hours thereafter. The maximum blood pressure was determined, comparisons made, and changes in the blood serum were noted. The condition of the motility of the stomach and intestines was observed. A study of excretion and secretion was made. Where death occurred, a postmortem examination was made. Where shock was evident, the abdomen of some of the animals was opened under local anesthesia. The condition of the splanchnic circulation was determined by direct inspection before external factors brought about any changes, such as might be produced by air, room temperature and manipulations. The serum was secured in some immediately, and in other cases twenty-four hours after anesthesia, by the usual method of bleeding the animal in order to observe any changed condition and its toxic properties. The mucous membrane of the stomach and intestines were dissected out, and both mucosa and muscularis were chopped up separately, to determine the presence of the anesthetic used, by distillation and appropriate tests. The length of time of the anesthesia ranged from one to six hours. A distinction was noted between the immediate or primary effects and those that were remote or secondary.

The conclusions that can be drawn from the details of the experiments made on animals under chloroform or ether are that where shock is produced it does not materially differ from the shock that results from trauma. The most constant pathologic factor is failure of circulation, and this is especially expressed in splanchnic congestion. The failure of temperature and respiration has been considered to be the result of vascular failure, with the corresponding fall of blood pressure.

It will be seen, however, by referring to the Protocols 13 and 15 that the temperature fell several degrees after

the injection of the serum, while the blood pressure did not always show a corresponding fall.

Wilson holds that death following chloroform and other anesthesia is always due to a failure of circulation, and this failure renders the nutrition of vital centers impossible. This would seem to imply that we are dealing with a question of time and degree of circulatory disturbance. White echoes the universal clinical observation that anesthesia always adds to shock. But it is not always recognized that shock itself is often produced by the general effects of anesthesia without trauma, hemorrhage or other etiologic factor.

Kirk has shown experimentally that irregularity of the heart and syncope occurs in animals after the last drop of chloroform has left the blood; and it is well known that chloroform and ether may be found in the urine as long as a week after the anesthesia. Horsley demonstrated that death arose from shock to the medullary centers, and that the question of dosage was more of time than amount. The evidences of vomiting, long-continued after anesthesia, are associated with severe circulatory depression, and not infrequently syncope. Ceccherelli experimented on animals with chloroform to determine changes in body temperature, and Angelesco carried out similar experiments with chloroform and ether. They found the fall in temperature was in direct relation to the disturbance of the circulation; that where blood pressure fell rapidly the temperature might fall from three to four degrees F. On the other hand, improved respiration and circulation caused an improvement in the temperature. Duplay and Hallios demonstrated by experiments on dogs, with choroform and ether, that there was always a fall of pressure under choroform, also with ether, where the medullary centers were deeply narcotized. From the animals experimented on they concluded that if the failure of the circulation was the direct result of the respiratory failure, as a result of anesthesia, that we ought to expect prompt recovery from the syncope under artificial respiration. But this was not borne out in these experiments. Hill concludes that chloroform paralyzes the splanchnic vasomotor tone, and, at the same time, diminishes the respiratory pump, and shock or fear, he claims, acts like chloroform by its tendency to abolish the compensatory mechanism for the hydrostatic effect of gravity. Hare holds that in overdoses the heart and respiratory centers are paralyzed, and that in the usual proper doses chloroform produces death in the same manner as hemorrhage does, that is, by failure of the respiratory center, because it is deprived of blood, and a pulse failure because the heart has no blood to pump with.

Bland, in comparing the effects of ether and chlorofom shows that chloroform invariably causes a fall in blood pressure, while ether does not except at the end of anesthesia and after narcosis. Hewett claims that surgical shock will occur more readily under ether than chloroform.

The explanations that are usually given for the complex symptoms found in shock from anesthesia can not be

explained by the simple failure of blood pressure and respiration, but there appear to be some direct toxic bodies formed that are found in the blood serum. The injection of the serum from animals that have shown evidences of shock produces many of the symptoms manifested in shock, which include loss of sensation, general malaise, marked fall in blood pressure, stertorous respiration and, what is generally more significant, rapid fall in blood pressure.

Kast and Mester are of the opinion that the blood contains the products of disturbed metabolism, for they found that after prolonged narcosis in healthy individuals a continued disturbance in metabolism of albuminous substances occurred, similar to that in phosphorous poisoning. Becker of Bonn states that there is found in the majority of healthy persons acetonuria of varying duration after narcosis. Boyer found cases of acetonuria with coma and death in from twenty-four to forty-eight hours after operation.

These observations would seem to prove that there are poisonous substances or toxins produced in the serum. The question, however, becomes more complicated when it is remembered that there is a deficiency in eliminations, and therefore a retention of toxins. This may be inferred from the experiments of Galeazzi and Grillo with methylene blue. They conclude that the anesthetic lessens the elimination of toxic substances, just as it lessens the elimination of methylene blue. Kemp found that ether causes a rise in blood pressure in the carotid artery, followed by a fall, the urine becoming scant and containing albumin soon after the commencement of the fall in pressure. A similar phenomenon was observed after chloroform; the fall was more gradual, and secretion from the kidneys lessened as the circulation was depressed. Eisendrath found cylindroids and other evidences of damage to the kidneys after anesthesia.

It is clearly evident that the toxicity of the blood may be increased through toxins elaborated by the direct effect of anesthesia, and by the retention of poisonous toxins which are normally excreted.

It is now well recognized that the blood serum normally has the power to neutralize to a greater or less degree toxins that circulate in the blood. One of the important properties of normal serum is its antiferment action, which is shown by the work of Firmi, Roden and Morganroth. Landsteiner shows that the normal blood weakens the fermentive action of pepsin and Simnickzi follows up this work and demonstrates that blood serum has an antiferment action on papayotin; and also that alcohol weakened or destroyed entirely this antiferment action of the blood.

The writer found that mixing chloroform and ether with normal blood serum lessened the antiferment action of the serum on trypsin in egg albumin. This was demonstrated by the following method: Blood serum was mixed with chloroform and ether and kept in an incubator, after which the narcotic was driven off from the serum, and the serum then mixed with one to two grains of pancreatin and a dish of egg

albumin, which it digested completely, while the normal blood serum unmixed with chloroform and ether only softened the disk.

We must conclude that not only the chloroform or ether may possess this property, but an alteration in metabolism may generate a substance that counteracts the antiferment action of the blood.

OBSERVATIONS ON THE BLOOD SERUM.

We next consider the antiferment action of normal serum as compared with serum from animals that have shown symptoms of shock after anesthesia. In the following observations of the relative antiferment action of the sera, the Mett method was used. This consists of simply aspirating egg albumin into a capillary glass tube, 1 to 2 mm. in diameter, and allowing the albumin to coagulate in the tube at a temperature of 95 C. The tube is divided in short lengths and dropped into 2 to 5 cm. of the sera under investigation, with the addition of pancreatin or carica papaya. This is placed in an incubator at 37 C. After a period of twelve hours the tubes are taken out and the length of the undigested column of egg white is measured off by placing on a small glass millimeter scale under a low-power microscope. The difference between the length of the column of undigested white of egg and the length of the tube gives the degree of digestive power of the fluid. The sera into which the lengths of tubes with their albumin contents were dropped were prepared by taking from 2 to 10 c.c. of blood serum from dogs that had been anesthetized and mixing it with 15 decigrams of pancreatin or carica papaya, and this was controlled with normal sera prepared in the same way, the Mett method being then put into practice, as described above.

The following tables show the relative degree of inhibition of the sera to the action of the ferments of normal dog serum, as compared with the sera from animals that have been under chloroform or ether anesthesia.

In order to show the direct effects of chloroform and ether on normal blood serum, the following tables show the findings in a number of experiments performed. The anesthetic was mixed with normal serum and allowed to remain two to three hours, after which the anesthetic was driven off by heat at a temperature of 45 C., aided with a vacuum.

AFTER TREATING WITH CHLOROFORM.

| Serum and Pancreatin Mixture | Digested 10 hours. Serum and Carica Papaya Mix't. |
|---|---|
| 5 c. c. . . . 6. 1 mm | 5 c. c. . . 4. 1 mm |
| 2 c. c. . . . 8. 2 mm | 2 c. c. . . . 7. 2 mm |
| 3 c. c. . . . 7. 1 mm | 3 c. c. . . . 4. 3 mm |

AFTER TREATING WITH ETHER.

| Serum and Pancreatin Mixture. | Digested 10 hours. Serum and Carica Papaya Mix't. |
|---|---|
| 5 c. c. . . . 5. 1 mm. | 5 c. c. . . . 4. 4 mm |
| 3 c. c. . . . 3. 1 mm. | 3 c. c. . . . 5. 6 mm |
| 4 c. c. . . . 6. 1 mm. | 4 c. c. . . . 5. 8 mm |

NORMAL SERA.

| | |
|---|---|
| 5 c. c. . . . 3. 2 mm. | 5 c. c. . . . 2. 4 mm. |
| 2 c. c. . . . 2. 1 mm. | 5 c. c. . . . 1. 5 mm. |
| 4 c. c. . . . 2. 2 mm. | |

PANCREATIN, FIFTEEN DECIGRAMS.

| Time Animal Was Under Anesthetic | Time Animal Was Under Anesthetic. |
|---|---|
| 6 hours . . 9. 0 mm | 1 hour . . 3. 4 mm |
| 6 hours . . 8. 4 mm | 1 hour . . 4. 3 mm |
| 4 hours . . 7. 4 mm. | |

CARICA PAPAYA, FIFTEEN DECIGRAMS.

| Time Animal Was Under Anesthetic. | Time Animal Was Under Anesthetic. |
|---|---|
| 6 hours . . 8. 8 mm. | 1 hour . . 4. 7 mm. |
| 6 hours . . 8. 6 mm. | 1 hour . . 4. 1 mm. |
| 4 hours . . 8. 7 mm. | |

The blood serum of these animals experimented on also showed a marked hemolytic effect. After shock was evident from anesthesia and the animal was bled, the blood frequently showed a tendency to lake, and this

was also noticed where a considerable amount of serum was injected into an animal, the blood showing the same tendency. The following observations show this more definitely:

The serum from an animal that has been five hours under anesthesia, in shock, showed 15 per cent. hemoglobin. When fresh blood was added and centrifuged, the serum showed 50 per cent. hemoglobin.

Blood serum taken from a dog that had been six hours under anesthesia; hemolysis shown in the serum after standing eight hours; 4 c.c. of this serum added to 5 c.c. of fresh blood produced laking immediately in the test tube; .015 of blood in 4 c.c. of serum also produced laking. Hemoglobin in serum, 10 per cent.; after adding fresh blood and centrifuging, it was raised to 15 or 20 per cent.

Microscopic slide irrigated with shock serum and one drop of normal blood; placed in incubator; shadow corpuscles formed.

*Agglutinization.*—Serum from an animal that had been under anesthesia for three hours; one drop of blood under slide irrigated with serum showed immediate clumping. When blood from an animal six hours under anesthesia was used, the same condition was observed after the fourth and fifth dilutions.

*Precipitins.*—Immediate coagulations of blood have been frequently noted after prolonged anesthesia when the blood was withdrawn. One drop of normal blood added to 5 c.c. of sera showed coagulation within two minutes after having been placed in incubator. Equal parts of shock serum with normal blood showed immediate clotting of the whole mass.

The following condensed table represents the effect of serum taken from dogs which had been under the influence of chloroform or ether from one to six hours:

SERUM FROM CHLOROFORM.

| | Hemolysis. | Agglutination. | Precipitins. |
|---|---|---|---|
| 6 hours | Positive. | Positive. | Positive. |
| 5 hours | Positive. | Positive. | Positive. |
| 4 hours | Positive. | Positive. | Negative. |
| 2 hours | Slight. | Plus minus. | Negative. |
| 1 hour | Slight. | Negative. | Negative. |

ETHER.

| | Hemolysis. | Agglutination. | Precipitins. |
|---|---|---|---|
| 6 hours | Positive. | Positive. | Positive. |
| 5 hours | Positive. | Positive. | Positive. |
| 4 hours | Positive. | Positive. | Positive. |
| 2 hours | Slight. | Negative. | Negative. |
| 1 hour | Not constant. | Negative. | Negative. |

These experiments suggest the explanation of the cause of death in animals that have been in shock from the after-infection with saprophytic germs, which, without the shock, would have proved negative. Experiments made by the writer, which have been previously published, show that the *Staphylococcus albus*, *Staphylococcus pyogenes aureus*, and the colon bacillus were equally prompt and positive in their toxic effects when injected after shock. The *Staphylococcus albus* and colon bacillus, when injected into normal animals used as controls in these experiments, gave negative results.

EFFECTS OF CHLOROFORM AND ETHER ON THE STOMACH AND INTESTINES.

We have still to consider another source of toxemia and irritation that follow the use of anesthetics when administered only for a short period. I refer to the disturbances that arise from the gastrointestinal tract following narcosis. That anesthesia from chloroform or ether interferes with the functions of the stomach and intestines is, I think, admitted by all clinicians, but just what disturbances oc-

cur is not always made clear. These disturbances include those of motility and secretion, as the direct result of the anesthesia and the splanchnic congestion.

The local effect of the anesthesia is shown in the following local experiment:

The animal's esophagus was plugged to prevent the swallowing of chloroform or ether, and this was found to be quite as effective as tracheotomy for the purpose of administering the anesthetic through the tracheal opening. On examining the stomach through a fistula, previously produced and after gastric lavage, there was found an initial increase in the flow of hydrochloric acid, followed later by a diminished production of hydrochloric acid and ferments and the formation of a large quantity of mucus, which is always the product of irritation. Chloroform and ether were found in the wash water, they being recovered by distillation and the usual tests.

The fact that local irritation causes an initial rise in the formation of hydrochloric acid was first noted and published by the writer in 1894. It was subsequently demonstrated by him in 1895 and in 1896, and can be found by referring to the literature of his experiments with nitrate of silver, tannic acid, mustard and many other substances used in experimental acute and chronic gastritis. This initial rise in the formation of hydrochloric acid and pepsin was invariably followed by a decrease in their formation, and a corresponding increase in the formation of mucus, until subsequently no hydrochloric acid or ferments were secreted. It is, therefore, surprising to find that Pawiow of St. Petersburg, in his recently published work, claims that these phenomena were first observed in his laboratory, and were the result of the observations of Sawrieu, in 1900, which in six years after my observations, published both in this country and Europe.

It seemed desirable to determine whether the mucous membrane of the stomach and intestines contained ether or chloroform after anesthesia. To demonstrate this point, mucous membranes and muscle walls were examined separately. The stomach was washed out after a narcosis of two or three hours' duration, and the mucous membrane dissected from the muscle walls of both stomach and intestines. These were placed in separate receptacles and finely chopped. After thorough maceration, the products were distilled, and it was found that both muscle walls and mucous membranes contained a considerable amount of the anesthetics used. (The chloroform test is benzoisonitrile, C H N.) Ether was detected after distillation by the odor.

With both chloroform and ether, even after one hour's anesthesia, there was a distinct reaction for both found in distillation, but after two hours it was much more marked and distinct, and where six hours' anesthesia was used, the reaction was very much increased. In some of the experiments the mucous membrane was removed several hours after the effects of the anesthesia passed off, and still the anesthetic could be detected in the mucous membrane. The irritating ef-

fects of these would seem to account for the large amount of mucus produced, which is referred to above.

The writer has also found that constant irritation of the mucous membrane with substances, such as ether and mustard, if continued for any length of time, or if large enough in quantity, produced marked disturbances of the circulation. This was demonstrated in the experiments reported in my paper, read before the American Gastro-Enterological Association, at Washington, D. C., in 1900. This is in conformity with the observations of irritations of mucous membrane that may affect the heart and circulation reflexly. Kionka found that ether exercises an irritating action on all mucous membranes, even on those with which it has not been brought in direct contact. Guinard, by experimental research in narcoses, found that any irritation of the intestines caused by reflex action arrested respiration and circulation. Guirni observed that irritation, which may arise from mucous membranes affecting the pneumogastric and other nerve filaments, is more strikingly observed when the nasal mucous membrane is irritated, and may cause an inhibition of the heart's action. Rosenbery suggested the application of 10 per cent. solution of cocain to prevent this irritation. It was suggested to the writer to use applications of cocain over the area of the stomach and intestines, with a view to blocking the irritation that might arise from the anesthetics.

Meyer and Prebrium, in 1873, showed the reflex effect of gastric irritation on the heart, causing inhibition.

When it is remembered that vomiting and disturbance of the circulation are usually associated with anesthesia, and that the removal of the ether from the stomach by lavage will check the vomiting and frequently stimulate the depressed circulation, it is evident from both scientific and clinical observations that this reflex irritation is a very potent factor in the production of the symptoms of shock following anesthesia. This is strengthened by the observations of Brunton, who found that chloroform taken internally produces vomiting, and that even though coma and death be averted, the irritations of the stomach and intestines continue and produce the evidences of circulatory depression analogous to shock.

It is therefore evident that the atony which is noticed clinically may have some relation to the degree or quantity of anesthetic that is found in the walls of the stomach. The anesthetic used and the resulting toxic condition may act similarly to the toxic effect of fatigue stuff. This, with the effect of the anesthetic on the nerve centers, producing splanchnic congestion, may account for the lack of motion in the stomach and intestines. This atony results in the accumulation of gases in the stomach, and gases that are found normally in the stomach will distend it when the tone of the muscle wall is diminished or lost. Experimentally, through a gastric fistula, with the pylorus and cardia tied off, I have found that after the stomach has been emptied of its gases, the formation of gas in the stomach continues, which could not have been the result of fermentation, but must have been due to the gases

from the blood. The great distension that is sometimes noted soon after prolonged anesthesia produces considerable effect on the splanchnic circulation.

Meyer and Prebrium observed that distention of the stomach caused a rise in blood pressure. The writer's observations, previously published, were that the initial rise was followed by a fall in blood pressure, especially if the distention was chronic or prolonged. The disturbance of the circulation, as the result of atony and distention, must constitute a very important factor in anesthesia, and as long as there is a disturbance of the splanchnic circulation we must expect a disturbance of the motor power of the stomach and intestines.

It must also be remembered that where there is a lack of motor power with retention the excretion of chloroform and ether into the stomach seems to increase the toxicity of the stomach contents. From this we would deduce the observation that chloroform and ether either form a new compound or have the power of dissolving out the toxic principles that are readily absorbed. The injection of the normal stomach contents does not produce such toxic effects up to 40 c. c.; whereas in atony of the stomach, especially after chloroform or ether anesthesia, the toxicity of the stomach contents is markedly increased. The increased bacterial growth and the formation of toxins in gastric atony have been repeatedly shown in the author's literature of the past eight or nine years.

SUMMARY.

The complex clinical picture of the after-effects of chloroform or ether anesthesia is made more clear by experimental research, from which we may deduce the following facts:

1. The circulatory disturbance is a direct result of the chloroform or ether acting on the vasomotor centers.

2. The prolonged effect of chloroform and ether on the splanchnic circulation results in congestion associated with fall in temperature. Temperature may fall without fall in blood pressure.

3. The direct effect of the toxins of chloroform and ether acting on cells, with disturbance of metabolism, may produce toxic products.

4. The resulting elaboration of toxins produces symptoms of "autointoxication," associated with the formation of hemolytic and agglutinating bodies, and precipitins.

5. Indirect toxic effects result from retention of toxic products through disturbances of elimination.

6. There is lessened resistance of the blood serum to normal excreted toxins.

7. There is lessened resistance of the blood serum to bacterial toxins.

8. There is diminished resistance to the development of saprophytic and pathogenic micro-organisms.

9. This may be partly explained by the changes observed in the sera, such as diminished antiferment properties, hemolysis, agglutination, precipitins, etc.

10. That reflex effects result, such as reflex irritation set up by the excretion of the anesthetic into the stomach and intestines.

11. As the result of atony there is the formation of toxins in the stomach and intestines through bacterial growth.

12. Atony of the stomach and in-

testines results in the accumulation of gases and interference with the circulation.

13. There is increased toxicity of the stomach contents in the presence of chloroform and ether.

## THE TREATMENT OF RHEUMATISM.*†

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The remarks one may have to make upon treatment are of necessity largely determined by the trend of the discussion of the topics which have preceded. A systematic statement of the treatment of rheumatism must be very brief to comply with the limitations imposed as to time. It is difficult in any case, but particularly so in the case of rheumatism, to do more than generalize, as it is not the disease but the patient which we have to treat, and in the absence of the patient only general statements would appear possible. Furthermore, the term has come to be not a specific but a general one, and the state of pathological opinion on it is, to say the least, unsettled. Bearing in mind the now generally accepted view as to the infective origin of rheumatism, the first indication for treatment would seem to be prophylaxis. The tonsils may be looked upon as a frequent point of ingress of the infection, and hence, particularly in children, recurring tonsillitis, urticarias, erythemas, and similar skin affections, thick, scalding urine, transient pains, specially so-called growing pains; fleeting pyrexia, nocturnal restlessness, palpitations, pleurisy and other suspicious symptoms, should all be promptly guarded against by anti-rheumatic treatment.

No definite line of treatment can be laid down, but rheumatism always gives abundant scope for skill and care. With marked tendency to natural recovery, but with no definite time-limit, and with distinct tendency to relapse, it is difficult to determine the part played by drugs in establishing a recovery, and hence the great list of drugs which have been recommended. Some manifestations are easily controlled, such as arthritis; others with the greatest difficulty, for instance, carditis.

Another general statement which may be made is that depleting treatment, such as bleeding and purging, is bad.

One may attempt to systematize the treatment, at any rate in his own mind, but cannot hope to say anything new; but if on the other hand, in his attempt to say something of interest, one drops into details, one's remarks on treatment are apt to end, as military men would say, "in the air."

The three main lines which a statement of treatment may reasonably be expected to take are: (1) Treatment of acute rheumatism; (2) treatment of chronic rheumatism; (3) that of complications.

1. Treatment of Acute Rheumatism.—With regard to the treatment of acute rheumatism, the infective view of the origin of this disease compels regard to the question of constitutional resistance. Vigorous treatment by powerful drugs may do

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harm by reducing the individual's resisting power more effectually than they control the disease. Poynton declares that he believes that in dangerous and complicated cases of visceral rheumatism, especially in carditis, the best results come from palliative measures, rest, careful feeding and nursing, moderate doses of salicylates for pain and arthritis, stimulants for cardiac failure, small doses of opium for cardiac distress and sleeplessness, proper elimination, mild tonics, in convalescence; in short, a watchful but gentle treatment. Under such measures some of the most desperate cases have rallied, and fewer have gone to the bad with the sudden development of urgent symptoms. With these remarks one may state that the treatment of acute illness resolves itself into (*a*) constitutional and (*b*) local measures.

(*a*) *Constitutional.*—Absolute rest in bed. This is of prime importance, especially with children, as tending to avert possible attacks of carditis, or to control them if developed. Fortunately pain usually compels this. The room should be warm and of even temperature, well ventilated but without draughts, specially during the sweating stage of the illness. The bed should be firm and well made, better high and narrow, and adjusted especially with regard to the difficulty which even a strong nurse will have in handling a patient to whom even the least movement may cause great pain. The personal and bed-clothing should be woolen, but not too abundant, as the drenching and ill-smelling perspirations must be specially considered. The diet should be in the main, fluids, preferably milk. Fats, while of the utmost value in chronic, are contra-indicated in acute rheumatism as apt to impair digestion while the fever lasts. Carbo-hydrates, specially farinacea, are the mainstay of the nurse, while sweets are almost more unsuitable in acute than in chronic rheumatism. As to proteids, there is a singular unanimity among physicians of high repute against their use in acute rheumatism. Latham insists that beef-tea and similar meat preparations cause relapses. Fish, poultry and white meats may be gradually resumed after the temperature has been normal a week, the red meats later and with caution.

*Drugs.*—As is the fashion in these days, drugs have been left to the last in the inventory of the means of cure. While their name is legion, and the majority of them useless, there are some of undoubted value. First in the list (1) I would place purgatives, specially mercurial salines used early. Next I would mention (2) vascular depressants, as aconite, veratrum viride, and cimifuga, which were used in presalicylic days, and if given early are doubtless of value. (3) Antipyrin and antifebrin are sometimes of distinct service, even though depressing, in those few cases in which salicylates fail, till then they should not be exhibited. (4) Methylene blue, salophen, aspirin (or acetyl propylamine, guaiacum, colchicum, salicylic acid), trimethylamin and rhus toxicodendron, and sulphur, are a few of the drugs which have been found more or less useful in isolated cases. Opium, and especially in the old days full doses of opium and nitre,

was occasionally used, and may be used still, specially in cases of cardiac complication, and where salicylic treatment has not proved satisfactory. (5) Alkalies, such as the citrate, acetate, and bicarbonate of potash, form a very important group. In ordinary acute cases doses of 30 grains every four hours are to be used, till the urine has been rendered neutral, when the dose is gradually reduced. After specially large doses there is a distinct tendency to depression, and in some cases marked diarrhea. (6) I have purposely left to the last any mention of the salicylates. Bearing in mind the infective theory, I would mention quinine with this group, which used specifically has often been useful, specially in the later stages. These drugs act principally by rendering the blood and tissues unfit culture mediums for the cause of the disease, the explanation being similar to that given for the benefit derived from these drugs in other infective disorders, such as pneumonia.

The drugs usually employed are salycin, salicylic acid, salicylate of soda, oil of wintergreen, and salol—the latter on account of containing a high percentage of carbolic acid being dangerous in full doses,and the danger increasing directly with the youth of the patient. Also, I would mention the less common salicylates of bismuth, lithium, etc. In speaking of the treatment of acute rheumatism it need scarcely be mentioned that the use of the salicylates has outlived all adverse criticism. They are not now looked upon as productive of visceral complications nor of relapse, though they are not believed to give quite the same security against them as alkaline treatment, or rather a treatment in which alkalies and salicylates are combined, and I think that the great majority of practitioners now would look upon it as almost malpractice to refuse a patient the relief of pain and fever which this treatment affords. It was introduced first in 1876 almost simultaneously by Stricker, F. Traube's assistant in Berlin, and by Dr. Maclagen, of Dundee. Willow tea is said to have been known for generations by the Hottentots and Boers of South Africa as a remedy for rheumatism. Among bad effects from the use of salicylates must be mentioned: (1) Nausea and vomiting, with epigastric pains; (2) enfeeblement of the heart's action. The exact effect of the drug in this direction is difficult to determine, as heart failure in rheumatism has been ascribed by the opponents of the salicylates to the drug and by its defenders to the effect of the disease on the heart muscles. (3) A third undesirable effect, or group of effects, is the cerebral symptoms—deafness, giddiness, and noises in the ears, sometimes severe headache and even delirium. Disturbances of this sort, due to the salicylates, are very likely, if they occur, to be accompanied by a lowered temperature, as if the temperature remains high they may reasonably be attributed to the fever. Another occasional bad effect from overdosage is epistaxis. Much of the adverse criticism of the drug is due to the error sometimes committed of withdrawing it not gradually, but suddenly on cessation of pain or fever; a great mistake. In spite of prolonged investigation and fairly

complete knowledge of the action of salicylates as far as pharmacology goes, their specific mode of action in rheumatism, as yet ill understood, as is admitted by so late an authority as Hale White in his text-book of 1901. It is likely that the infection finds a specific antidote in the drug, as that of malaria meets one in quinine.

(*b*) *Local.*—The local treatment of acute rheumatism consists of course of rest, warmth, special coverings and hot applications. The simpler the applications are the better in acute rheumatism. Elaborate liniments and counter irritant applications, while useful in chronic, are useless in acute rheumatism, Fuller's lotion of laudanum and bicarbonate of soda, the one to relieve pain and the other to neutralize the over acid secretions of the skin, is quite sufficient. Indeed, in view of the excessive perspiration, oiled silk and other impervious coverings are undesirable. A warm flannel covered with wool and many-tailed bandage is usually the best. One will occasionally meet with most happy results from the inunction of say 30 drops of oil of wintergreen over the inflamed joint. The oil of birch, *betula lenta,* known as betulol, I have seen act like magic used in this way.

When one thinks, not of the joint affections,but of the muscles,lumbago, etc., one has much the same to say about treatment,except that local stimulants,and massage are all of distinct service in the latter case—that is, with the muscles. Dry heat is usually more relieving than moist.

2. Treatment of Chronic Rheumatism.—The treatment of chronic rheumatism, like that of acute, falls into the two divisions of local and constitutional. The constitutional treatment of chronic rheumatism is in just as unsatisfactory a state as its pathology, as there are allied conditions, such as rheumatoid-arthritis, gonorrheal rheumatism,etc.,which are not infrequently mistaken for the true rheumatism. As compared with acute rheumatism, the relative value of constitutional and local treatment is almost reversed, since while the former is still very important, the latter is of much greater importance than in acute conditions. The line of action, too, depends partly upon whether the disease is muscular or arthritic.

*Constitutional.*—Before any specific measures one must place food. Whatever view we may hold on the pathology of this condition, there is no doubt that malnutrition exists. Anemia is, as a rule, plainly marked, and therefore food must be abundant, varied, fresh and digestible. Fresh fruits and vegetables; a due proportion of starches; sweets limited, or quite excluded, as well as malted and most spirituous liquors (particularly beer and sweet wines); and meats being used rather freely. More particularly fats are a necessity, as shown by the value of cod-liver oil in such cases. Onions and celery are two vegetables of which such authorities as Whitla speak highly. Onions especially are valuable on account of the high proportion of sulphur which they contain. Extremes in diet are usually unsafe. Fads, such as the Salisbury treatment on the one hand, and vegetarianism on the other, are a mistake. As to medicines, they may be grouped into the two classes, of alkalies and

alteratives on the one hand, and hematinics on the other. The first group contains all the iodides, especially sodium iodide, arsenic and sulphur,and, of course, the ordinary potash and soda salts. The danger in their use lies in forgetting that alteratives without good food and exercise are depressing and aggravate the anemia already present. The alkaline cachexia of patients who go without supervision to the various anti-rheumatic water-cure establishments is familiar to us all.

*The Iron Treatment.*—As to this treatment, details cannot be given. Suffice it to say that the form which I have found most useful is the soft Blaud's mass with arsenic, made by Duncan and Flockhart. Salicylates are useful for pain, given in moderate quantities. Ziemssen says one dose at bedtime of 40 grains or so. Sulphur, both internally and externally, is sometimes of marked value; a heaping teaspoonful in honey or marmalade each morning and the powder freely dusted over the wool with which the inflamed joint is dressed.

3. COMPLICATIONS.—The surgical or orthopedic treatment of the results of chronic rheumatism has already been taken up by Dr. Nevitt. We now reach, finally, the third main subdivision of rheumatism—that of complications. The two main complications of acute rheumatism are carditis and hyperpyrexia. As to heart complications, no attempt can be made to discuss the topic through lack of time. It is one on which many a volume has been written.

*Hyperpyrexia.*—This one may define as being a temperature of 105 degrees F., especially if it has been reached rapidly,with signs of going on up. One must then remember that the heat-regulating mechanism is hopelessly upset, and therefore attempts to control the situation by drugs are probably useless. *A priori*, one would use antipyrin, antifebrin or phenacetin, as the increased temperature is due to increased heat production, not to diminished heat loss, and these drugs act by diminishing the heat production through their effect upon the oxidation processes in the body. The authorities agree that time spent on them is wasted, and that the cold pack or bath used at once gives the only means of escape. Besides being a waste of time these drugs are depressing to the heart, already sorely tried by poison and fever.

Dr. Armstrong, of Boston, has spoken strongly in favor of the immediate use of the cold bath, and believes that in many cases the time spent in cold sponges or baths has determined a fatal issue. His method and rules are that the patient should be immersed in water at 92 degrees F., which should be cooled down to 72 degrees F., and the patient kept in usually from ten to thirty minutes, with ice to the head, until the temperature falls below 100 degrees F. The condition of the heart calls for careful consideration during this procedure. On replacing the patient in bed, warm blankets and hot water bottles should be applied. The bath should be repeated as often as the temperature reaches 105 degrees F.

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No doctor can afford to be indifferent in the filling of his prescription.

## THE MODERN THERAPY OF SEPTIC PUERPERAL AND SURGICAL INFECTIONS.

BY ROSWELL PARK, H. D., LL. D., PROFESSOR OF SURGERY, UNIVERSITY OF BUFFALO.

The most efficient measures for the treatment of surgical infections are the various silver preparations for whose introduction into surgical and obstetrical work we are indebted to Crede of Dresden. We have been for decades looking in vain for an effective antiseptic which is devoid of marked toxic or irritating properties. Allotropic silver (Collagolum) seems to offer us the nearest approach thereto. Between this silver preparation which is so bland and the silver salts like nitrate of silver, there are the lactate and citrate of silver, also introduced by Crede, of which reasonably strong solutions can be used upon quite sensitive surfaces without producing much if any disturbance.

Let us first take the aqueous solution of soluble metallic silver (Collargolum) which in the strength of 1 to 500 in distilled water makes a somewhat cloudy solution. In this strength it may be used by intravenous injection in cases of severe general or puerperal sepsis, rapidly spreading gangrene, acute articular rheumatism or other serious infections. In fact, solutions as strong as 1 to 100 may be employed; it being desirable to introduce 6 cg. (.9 grains) to 10 cg. (1 1-2 grains) at least. If there be difficulty in injecting it into a vein it may even be given beneath the skin. Unpleasant effects will not be noticed, neither will any immediate relief follow, but the solution thus introduced coming into contact with the blood, which in these cases is swarming with germs, will promptly begin its bactericidal work, whose effects should be manifested after two or three hours by a fall of temperature and amelioration of septic symptoms. Silver used in this way has been of great service in cases of carbuncle and even of acute anthrax. Moreover its administration may be repeated as often as may seem necessary.

When metallic silver is made into a suitable ointment (Unguentum Crede) which, by the way, much resembles mercurial ointment, and is then applied to the skin, there is a rapid absorption of the silver itself with its dissemination into the blood stream and results like those just mentioned. It is simply a somewhat slower method of introducing it into the system. For many years I held and taught that the combination of resorcin, ichthyol and mercurial ointment, which I believe I introduced into surgical practice, was the most effective remedy for the treatment of erysipelas and all similar septic infections. To-day I have found but one combination which I think superior for this purpose, and that is the silver ointment, Unguentum Crede. I believe that its properties are more marked than those of the ointment which I so long used. No matter what part of the body be anointed absorption takes place readily and promptly, consequently any convenient surface may be medicated in this way. Cleanse the skin thoroughly, smear the ointment freely over the surface, cover the area with oiled silk, and put over this, if comforting to the

patient,a warm application to promote absorption. If the surface be not tender, the ointment may be rubbed in. In cases of puerperal sepsis it may be applied over the abdomen or to the inside of the thighs. In erysipelas it should be applied to the affected part. It makes very little difference what the exact nature of the infection is, one may rely upon it that the silver will be absorbed and will do good work. This is true for instance in such acute infections as endocarditis and meningitis.

Advantage may a'so be taken of the properties of metallic silver by giving it internally as an intestinal or urinary antiseptic, for which purpose it should be given in pills or capsules. These are unirritating and extremely efficient and may be given where remedies like salol, benzosol, etc., are ordinarily exhibited.

Lastly I would speak of the use of lactate and citrate of silver, not only for such purposes as the preparation of catgut, silk, gauze, etc., but in solutions of from 1 to 300 to 1 to 500 for the irrigation of septic cavities and for such purposes as washing out the peritoneal cavity in case of tuberculous peritonitis, for which I have repeatedly used it and always with benefit. I differ from my friend, Dr. Fenger, of Chicago, now dead, who did not favorably regard washing out the abdominal cavity in these cases. In my own experience, in several instances, a flushing of that cavity with a 1 to 500 solution has been of the greatest apparent benefit and has never occasioned any regret. Infected bladders, uterine cavities and vaginas may be advantageously, freely and frequently washed out with similar solutions. When using them one may have the feeling that he is using solutions of greater efficacy and of far less toxicity than any of the mercurial preparations would afford. Therein lies the beauty of these preparations, that in anything like equal strength they are more effective and much less toxic than the mercurial salts.

This is a very brief epitome of my views regarding the value of the silver preparations in surgery. I often state in my clinic that the good old-fashioned nitrate of silver is not used nearly so much as it should be and prove the strength of my conviction by its general use in 1 to 10 per cent. solutions in pus cavities. Not only is a full germicidal effect obtained but also that stimulation to healthy granulation which the nitrate is well known to afford. All in all, if I could have but one source for antiseptic solutions and applications I would rather look toward the preparations of silver than in any other direction—Abstracted from *The Alpha Omega Delta Bulletin*, March, 1903.

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Send us a report of your interesting cases. They will be of help to your brother physician. Use this journal as a medium of exchange of thought, and advance yourself as well as help advance others.

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Little Tommy when told he was growing too fast, said:

"Yes, I think they water me too much. Why I have to take a bath every morning."—*Indianapolis Sun.*

# The Medical Times and Register

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## Editorial.

### THE CONSOLIDATION OF THE NEW YORK MEDICAL JOURNAL AND THE PHILADELPHIA MEDICAL JOURNAL.

The *New York Medical Journal* and the *Philadelphia Medical Journal* are to constitute a consolidated journal. In bringing about the consolidation the publishers have not been actuated solely by a desire to enlarge the subscription list, though they do not profess to have been unmindful of the advantage to be derived from such accretion. They have cherished the far higher purpose of combining and furnishing to an enlarged circle of readers all the features thought to be of special value in the two journals.

Before the consolidation the *New York Medical Journal* was free of all commercial influence, and so was the *Philadelphia Medical Journal*. Two journals more harmonious in their aims and methods do not exist, and it is most fitting, therefore, that they should so combine their resources as to further those aims and improve those methods to the utmost. This they believe to be wholly feasible under the unification of the two. Fortunately, the two cities, New York and Philadelphia, are of such ready access to each other that no difficulty is apprehended in dealing with medical matters of local interest in each city, as they will maintain a Philadelphia office.

The *Philadelphia Medical Journal*, though it loses its distinctive title, will perpetuate itself as an integral part of the united publication, even as a woman, when she marries, does indeed lose her father's name, but parts with none of her individuality or of her influence.

NOTE.—The tendency of the times is towards amalgamation, and undoubtedly it would be better for a great many of the over-numerous medical journals of this country, should they follow the example of the New York and Philadelphia medical journals. This does not seem to be a stock watering scheme, as in another instance a few months back to be imposes upon the unwary physician, but a real consolidation of interests to the benefit of the publishers and subscribers alike. We congratulate the two journals and wish them success

### WHAT PHYSICIAN MAY RECOVER WHEN OWN CHILD INJURED.

The Court of Civil Appeals of Texas says, in St. Louis Southwestern Railway Company of Texas vs. Gregory that physical or mental pain suffered by an infant, by reason of personal

injury or wrong inflicted by the negligence of another, is not an element of damages which the parent is entitled to recover, but the right to recover damages for such pain is personally of the infant. If, however, the pain which the child suffers is such as to incapacitate him for services to his parent, the latter will be entitled to recover damages, not for the pain, but as compensation for the loss of services caused by the pain to the child. Though an infant be injured, there is no right to recover by the parent therefor, unless the injury be such as to cause loss of services, or require, at the hands of the parent, some expense or outlay that otherwise would not have been made necessary. Medical services, and all necessary expenses of the care and treatment of a child whose injury or sickness is caused by the negligent or wrongful act of another, are elements of damages arising from such negligence. It is not necessary that the parent engage a stranger to administer medical treatment to the child, if the parent himself is a physician competent to perform such medical services. If he performs such services he is entitled to recover from the wrongdoer a reasonable compensation therefor, for such wrongdoer has made it necessary because of his wrongful act. But the recovery by the parent should not exceed the value of the services performed. He cannot recover for the loss of patronage as a practicing physician while detained at home on account of the sickness of either his wife or child. Such damages are too remote. Nor is the anxiety and mental anguish suffered by him and his wife, or either of them, by reason of the child's sickness, proper elements of damages.

## Medical Progress.

### SCHERING'S FORMALIN LAMP IN WHOOPING COUGH AND OTHER INFECTIONS.

The Chicago Health Department (*Bulletin* of February 7, 1903), recommends the use of Formalin vapors in the treatment of whooping cough in accordance with the method of Dr. J. Cenex, who reported "On the Cure of Pertussis by Means of Formalin Vapors," as follows:

"My experience with Formalin vapors in infectious catarrhs and in influenza induced me to try them in whooping cough, with the following results:

"Last summer a nurse girl, fourteen years old, infected a child with pertussis. The nurse must have had it for many weeks; the cough was distressing and frequently caused vomiting. The attacks mostly occurred during the night. Without any other medication, I placed nurse and infant in a sitting room, and evaporated in a Schering Formalin Lamp four or five Formalin Pastils per 1,000 cubic feet of air space. After fifteen minutes, they were taken into a room which had previously been disinfected with about thirty pastils per 1,000 cubic feet. The children became a little paler, had less appetite, the eyes were irritated and had a sleepy appearance; but I observed no other untoward effects. The same night the girl coughed very much less, and afterwards not at all, and the baby entirely lost the cough.

"After this and other observations, and after the continuous use of the Formalin Lamp for room disinfection,

I adopted its systematic use in pertussis in accordance with the method described above."

The author recounts seven other cases rapidly cured by the same method, and concludes:

1. By the proper inhalation of Formalin vapors, it is possible to destroy the germs of whooping cough—those on the mucous membrane of the respiratory organs as well as those in the surroundings. The disease is cut short and further infection prevented.

2. If the removal of patients acts beneficially, it is only reasonable to assume that disinfection of the patient's dwelling is sufficient to frequently cure him.

3. It is advisable to thoroughly disinfect schools, hospitals, churches, etc., from time to time with Formalin vapors.—Abstracted from the *Zeitung der bohmischen Aerzte*, Prague, September 14, 1902.

## SUBLAMINE IN THE TREATMENT OF SYPHILIS.

Though the general results of the mercurial treatment in syphilis are satisfactory enough, the forms in which the drug could hitherto be introduced into the system left much to be desired. The inunction of the ointment is unscientific; we have no means of telling how much of the drug is absorbed and how much is taken up by the underclothing. Indeed, it is now a matter of debate whether the effects of this method are not ascribable to the inhalation of volatilized mercury during the process. There is almost the same uncertainty when the mercury is administered internally or by baths.

Subcutaneous or intramuscular injection is the only scientifically unimpeachable method of administration, but unfortunately all mercurial preparations hitherto employed in this way have serious drawbacks. Corrosive sublimate energetically coagulates the tissue albumin, causing hard infiltration and severe pain. The other soluble mercurial salts either contain too small an amount of the metal or are not sufficiently soluble. The insoluble salts have the advantage of requiring less frequent administration; but they cause severe pain, and it is not possible to remove any portion of the drug should the patient unexpectedly show signs of mercurial intoxication. The occasional deaths due to their employment hardly incite to their more general use.

Sublamine, mercury sulphate ethylenediamine, however, I found to be extremely soluble and not to coagulate albuminous solutions. The success of laboratory experiments made in this direction induced me to try it clinically.

Fifteen syphilitics were treated with 3.4 per cent. sublamine solutions, some 280 injections being given altogether. Some of the patients had fresh chancres; others had papular, tubercular and ulcerative secondary syphiloderms; and the rest had syphilitic affections of the mouth, tongue and larynx. The action of sublamine was exactly the same as that of sublimate. Primary indurations softened and healed, papular and tubercular syphilides retrogressed, and the mucous patches and ulcers of the mouth disappeared.

But the reaction at the site of injec-

tion was in every case far less marked. All the injections were made into the gluteal muscles. Indurations did indeed occur; but they were smaller and softer than those caused by sublimate and disappeared more quickly. It was also evident that the pain was very much less. To eliminate the possibiiity of bias on the part of the experimenter, two patients were given, without their knowledge, sublimate injections in the midst of their sublamine treatment; and they both complained at the next consultation of the especial pain of their last injection. Unpleasant by-effects were never observed.

We therefore possess in sublamine an anti-syphilitic that is readily soluble, does not destroy the injection needle so rapidly, and while as efficient as sublimate causes less induration and pain.—Abstracted from the *Deutsche Aerzte-Zeitung*, February 15, 1903.

## REPORT ON CREOSOTAL BY THE COUNT SPORK HOSPITAL OF KUKUS, BOHEMIA.

DR. VINCENZ KIRSCH, ATTENDING PHYSICIAN.

During an epidemic the hospital had 10 cases of croupous pneumonia. The oldest was 78 and most of them were between 60 and 70, being wasted and debilitated individuals. They all terminated favorably, however, in marked contrast to the accepted mortality in the senile of about 60 per cent. In Basle there were at the same time 129 pneumonia cases with 77 deaths.

The hospital attributes its remarkable experience solely to the use of Creosotal. Infectious pneumonia is usually accompanied by high fever, and the usual febrifuges increase the dangers from the heart in the aged. But under the early administration of Creosotal apyrexia is attained in 36 hours at the latest and the cessation of the fever marks the resolution of the process. The patient is entirely cured in the time which it ordinarily takes to reach crisis. The early appearance of the latter at a time when the patient's strength has not been exhausted by long illness justifies the expectation of cure. Creosotal does not only act as a direct disinfectant of the lungs, but as a powerful febrifuge as well.

No antipathy to the remedy on the part of the patient was encountered. The following formula was employed:

Creosotal von Heyden ..2 1-2 dr.
Spirit-vini Gallici .....5 drs.
Syrup althææ .....2 ozs.
S. Shake well and administer in four doses, either alone or with milk, in 24 hours.

Resolution of the pneumonia which in several cases occurred even before 36 hours, was heralded by a copious perspiration which was always a welcome phenomenon.

Creosotal is recommended on account of its harmlessness and the brevity of pneumonia under its use. Its cheapness is of especial importance in hospital practice.

It was further used for diagnostic purposes in all varieties of lung disease. In tuberculosis the results described above (temperature fall) were not noticeable; hence the drug can be recommended in all cases where there

is doubt whether a pneumonia or an acute tuberculosis is present.

We have also tried the remedy in all the various catarrhal affections of the respiratory organs; and we have everywhere had surprisingly favorable results.

As regards the dosage, we administered, according to the severeness of the fever, to children from 1 to 4 years old, 15 to 45 grains daily; from 4 to 6 years old, 45 to 60 grains daily; to children from 6 to 10 years old, 1 to 1 1-4 drams daily, taken in four equal parts during 24 hours. For adults the daily dose is 2 1-2 drams.

In catarrhal affections of adults 30 grains daily gives very satisfactory results. Children similarly affected should receive from one-third to the whole of the previously mentioned doses.

The remedy was also very valuable in whooping-cough.—*Translated from the Annual Report for* 1902.

## PNEUMONIA.

Hooker, in *Med. Summary*, recommends the jacket of absorbent cotton, mustard paste locally for the pain of any accompanying pleurisy, not allowing blistering to take place. This may be followed by a local application of vaselin. In treating a child two years of age he advises the following:

| | | |
|---|---|---|
| ℞. Quininæ sulph. | gr. xxiv 1 | 65 |
| Pulv. opii. | gr. ss | 03 |
| Ol. theobrom. q. s. | | |

M. Ft. suppos. No. viii. Sig.: Insert one into the rectum every three hours until the fever abates somewhat, then repeat it three times a day and finally one at night only.

When the foregoing seem to disturb the bowels the following is prescribed:

| | | |
|---|---|---|
| ℞. Acidi sulph. dil. | grt. xxx | 2 |
| Quininæ sulph. | gr. xxx | 2 |
| Syr. zingiberis | ʒ ss | 15 |
| Aquæ q. s. ad. | ʒ ii | 60 |

M. Sig.: One teaspoonful every three hours, diminishing the dose as the child improves, or increasing it if the fever increases.

The following is of value in reducing the fever:

| | | |
|---|---|---|
| ℞. Ammon. chlor. | gr. viii | 50 |
| Tinct. aconiti rad. | m. iv. | 25 |
| Tinct. opii camph. | m. xv. | 1 |
| Syrupi tolutani q.s.ad. | ʒ ii | 60 |

M. Sig.: One teaspoonful every hour for three hours, then every three hours. When the fever is under control the time may be lengthened to once in four hours.

In cases late in the disease if the heart needs stimulation the following is given:

| | | |
|---|---|---|
| ℞. Ammon. carb. | gr. iv | 25 |
| Tinct. digitalis | m. xv 1 | |
| Spts. frumenti | ʒ i 30 | |
| Syr. tolutani q.s. ad. | ℥ iv 120 | |

M. Sig.:One teaspoonful every three hours; or:

| | | |
|---|---|---|
| ℞. Strychninæ sulph. | gr. i | 06 |
| Syr. tolutani q. s. ad. | ʒ i 30 | |

M. Sig.:Five drops after meals.

As a sequel a lingering cough may be present and under such circumstances the following may be given:

| | | |
|---|---|---|
| ℞. Creosoti | m. ii | 12 |
| Spts. vini gallici | ʒ ss 15 | |
| Glycerini | ʒ ii 8 | |
| Syr. tolutani q. s. ad. | ʒ ii 60 | |

M. Sig.: One teaspoonful three times a day to a child one or two years of age.—*Journal A. M. A.*

## THE NON-SURGICAL TREATMENT OF HEMORRHOIDS WITH CLINICAL REPORTS.

BY EUGENE C. UNDERWOOD, M. D.,
LOUISVILLE, KY.

In a large surgical practice, I have had a great many patients apply to me for relief from hemorrhoids but who insist that the treatment must consist of a purely non-surgical means. In fact it is not infrequent to have these patients tell us that they have been operated on, and despite this the piles have come back and are now the burden of their lives.

The demand for a non-surgical course of treatment that promised to give good results has led me to study this subject as thoroughly as I could. In looking up the literature on this subject, one will find that a great many able writers on the practice of medicine have a chapter on hemorrhoids. Loomis and Strumpell may be mentioned as writers of great prominence who advocate and advise non-surgical means as fitting in appropriate cases. Conversation with prominent practitioners has confirmed me in the belief, that we not only have a great many who use other than surgical treatment, and that many do not contemplate surgical interference and still at the same time have great success.

The treatment of hemorrhoids in order to be successful, must comprehend such dietary and medicinal measures as will remove the cause. The patient must use such a diet course as will leave a residium in the alimentary tract. Concentrated foods are to be studiously avoided. Such a diet as is usually put down in works on dietetics "as the anti-constipation diet" must be adhered to. The patient must also take regular and systematic exercise.

Diet and exercise may be regarded as means which cannot be dispensed with, if we would attain satisfactory results.

I only give remedies internally which assist along with the diet in correcting the associated constipation.

As a means of bringing about a cure of the hemorrhoidal condition, I rely upon Glyco-Thymoline (Kress.) This I have injected in the rectum every two or three hours with a syringe. The agent is very soothing to the mucous membrane and rarely fails to give relief and of the promptest kind. When there are hemorrhoidal tumors protruding from the margin of the anus I have them covered with absorbent cotton and kept wet with Glyco-Thymoline (Kress) treatment as in the above case, and he adhered to the diet and took a sufficiency of exercise. This patient made a rapid recovery and has had no return of hemorrhoids in over a year.

One of the worst cases which I have treated for some time was on my list two weeks ago. She had been confined to her bed for a week. On the regular employment of Glyco-Thymoline (Kress) she experienced relief in a few hours and rapidly got well.

By the treatment advocated above, I have cured a great many cases of piles and never have had to resort to surgery in any case. I am frank to say that most all cases seen in practice will yield readily to this treatment, and regard it as the best treatment in the reach of the profession. It has

the merit too of being a pleasant treatment.

Case A. Mrs. P....., aged 37. This woman had been confined for four days with piles. She suffered so greatly that it was impossible for her to sit or stand; she had internal hemorrhoids and some protruded from the margin of the anus. Two ounces of Glyco-Thymoline (Kress) was injected beyond the sphincter ani, and absorbent cotton kept wet with the agent was put on the protruding piles.

On this the patient obtained relief in an hour or so, and when I called the following afternoon I found her up eating supper; she had now no pain. The remedy was used every six hours for the next twenty-hour hours, and the patient is now well and in vigorous health.

Case B. This patient was a man forty years of age who had suffered at intervals for several years with piles. He wanted to know whether I could give a treatment non-surgical in its nature that would cure him. I told him I thought I could, provided, he would adhere to a corrected diet and take exercise. He was given the Glyco-Thymoline (Kress) treatment as in the above case, and he adhered to the diet and took a sufficiency of exercise. This patient made a rapid recovery and has had no return of hemorrhoids in over a year.

Case C. This lady had suffered with constipation and piles for several years; in fact, since beginning to teach in the public schools. On a corrected diet, regular exercise and Glyco-Thymoline (Kress) used as in the other cases, this patient made a quick recovery. She has gone two years without an attack of hemorrhoids and has greatly improved in general health.

There is no local application which is so curative to the mucous membrane as Glyco-Thymoline (Kress.)

## BED SORES.

Palmer, in *Merck's Archives,* recommends a method in the treatment of bedsores due to pressure and atrophic changes aggravated by urine undergoing ammoniacal decomposition: A bag of soft linen is made sufficiently large to extend down the thighs and along the patient's spine. This bag is then filled with bran previously moistened with dilute sulphuric acid. Sufficient bran is used to make an easy cushion. By this method the urine which is constantly dribbling from the patient is absorbed by the bran and the sulphuric acid present neutralizes the ammonia. The proportions advised are about two ounces of sulphuric acid to a quart of bran. This should be renewed every second day. It only makes the bran slightly moist.

## INTERNAL HEMORRHOIDS.

Ross, in *Virg. Med. Semi-Monthly,* states that in the treatment of hemorrhoids, which protrude at stool and can be pushed back by manual effort, he administers a heaping teaspoonful of compound senna powder the night before the treatment, to be followed by a glass of bitter water or a teaspoonful of epsom salts before breakfast the next morning. Supplement this by a high enema of normal saline solution before the operation; then cleanse the rectal region under antiseptic precautions.

he following solution is then injected into the center of each tumor beginning with the tumor highest up:

| | | |
|---|---|---|
| ℞. Acidi carbol. (95 per cent) | ʒ ii | 8 |
| Glycerini | ℥ ss | 15 |
| Aquæ destil. q. s. ad. | ℥ ii | 60 |

M. Sig.—Inject as directed.

When each tumor has thus been treated coat the mass with carbolized vaselin and gently push them well up into the bowel.

If much pain is present some opiate may be given. Rest, a light diet and unmoved bowels are enjoined for two days. Then the compound senna powder may be given again at night, followed by the salts in the morning and instruct the patient to avoid straining. The following ointment should then be given night and morning:

| | | | |
|---|---|---|---|
| ℞. Nosophen | ʒ i | 4 | |
| Cocainæ hyd. | gr. vi | | 35 |
| Ext. belladonnæ | gr. iv | | 25 |
| Ung. simplicis | ʒ vii | 28 | |

M. Sig.—Apply locally on an applicator introduced well up into the bowel.

The author states that one treatment is generally all that is required.

RECTAL ULCER.

M. G. Price, according to the *Med. Standard,* recommends the following in the treatment of rectal ulcer from whatever cause:

| | | |
|---|---|---|
| ℞. Ext. hydrastis aqueous | ʒ iiss | 10 |
| Acidi carbolici | m. xxx | 2 |
| Glycerini | ʒ ix | 36 |
| Ext. hamamelidis flu. | ℥ viss | 195 |

M. Sig.—Add to one half a teaspoonful of this mixture an equal quantity of starch and two tablespoonfuls of warm water. Inject into the rectum and advise the patient to retain it over night.

WRITING on "Creosotal in Pneumonia," Dr. Bernhard Friedemann, of Kaukehmen (Germany) reports in the *Therapie der Gegenwart,* Feb. 1903, 14 cases of croupous pneumonia, of which he details 10, to which he administered Creosotal. Two of the patients were alcoholics; but they all rapidly yielded to the treatment.

The characteristic effects of Creosotal were marked in all these cases, particularly in one which, on account of premature discontinuance of the treatment, suffered a relapse.

Dr. Friedemann exhibits as large doses of Creosotal as possible,in emulsion, and finds that it is always well borne. His adult dose is 1 1-2 to 2 drams per day; for children from 8 to 14 years about half that amount; and for infants proportionately less.

He has no doubt that Creosotal is inhibitive and bactericide to the organic etiological agent in croupous pneumonia. This is proved by the recrudescence of the disease when the administration of the remedy is stopped too soon. It is also probable that the drug exerts an antitoxic action. The rapid fall of temperature and the prompt improvement of the general condition are hardly explicable otherwise, for both usually occur in 12 to 24 hours. Further experiments will enlighten us on these points. It would also be interesting to ascertain whether Creosotal has a similiar action upon the other affections due to the pneumococcus.

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No doctor can afford to be indifferent in the filling of his prescription.

## THE THERAPEUTIC VALUE OF ALTERNATING CURRENTS APPLIED TO THE ABDOMINAL SYMPATHETIC NERVOUS SYSTEM.

S. Sloan concludes as follows: (1) Those cases of uncomplicated neuromuscular asthenia in which the cause had ceased or had been removed most amenable to the treatment. By neuromuscular asthenia he means neurasthenia minus its psychic elements. (2) Regarding cases of visceral neuroses almost as much can be said. (3) Cases of persistent sickness, some of them of reflex character, have done well under the treatment, the only failure in this list having been one in which the liver was considerably enlarged. (4) The treatment may be relied upon in vasomotor cases, all of the five cases having been successful. (5) The treatment will be of little avail in neurasthenia. (6) In cases in which inflammatory mischief existed in the pelvic organs the result is not likely to be good. In such cases vaginal electric applications have given the best results (7) When septic endometritis exists only a very temporary improvement will follow, although this may be made a permanent one if the treatment is resorted to after curettage has removed the septic condition from the uterus. (8) Epileptics are likely to derive no benefit from the treatment.—*The Lancet, May 30, 1903.*

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The child's health depends not only on proper food and suitable clothing, but on a favorable environment and training in self-control, for however small the child, this latter is an important factor in preserving health.

## AN UP-TO-DATE JOURNALIST.

The following tragic tale, which appeared in the *Baltimore Sun*, will be appreciated by such of our readers as have a well-developed sense of humor. The alienists especially will rejoice at the discomfiture of the enterprising scribe. They are the ones who suffer most from the frantic attempts of the newspaper reporters to fathom all the mysteries of the madhouses, and from the futile endeavors of some of these same gentlemen to "show up" the abuses of the asylums:

A Paris journalist, desirous of learning how lunatics were treated, got himself up in a fantastic costume and accosted a gendarme in the street with an angry demand why he did not salute Emperor Napoleon I when he met him, writes the Paris correspondent of the *London Chronicle*. The gendarme promptly arrested the journalist and removed him to the station, when in due course he was transferred to an asylum as a patient suffering from dangerous illusions. After learning thoroughly the system of treatment to which lunatics are subjected, the journalist desired to leave the asylum and give his paper the benefit of his experience. He, therefore, requested to be brought before the medical board of examiners, to whom he explained the situation, but was horrified when the doctors gravely shook their heads and reported that they considered he was now become really dangerously mad. He was, therefore, kept under the closest watch and restraint, and nearly made himself mad with anxiety before he induced one of the nurses to convey to his paper the news of his plight. But even then his troubles were not over, for the doctors refused to accept

the explanations offered, and have all certified that the man is a dangerous lunatic. A special commission was appointed to investigate his case.

We do not vouch for the authenticity of this yarn, for it is suspiciously lacking in names and dates; but we do answer for its containing a fine moral. It is too good a story not to be true.—*Philadelphia Medical Journal.*

## THE TREATMENT OF OTITIS MEDIA SUPPURATIVE ACUTA.

S. Maccuen Smith says that in the treatment of this affection it must be assumed that every effort has been made to arrest the disease before the formation of pus. But if this has already formed, it should be evacuated by a free incision of the membrana tympani, but never by simple puncture. After evacuation of the fluid from the tympanic cavity, a good recovery will be made in many cases by cleansing the canal and middle ear with an antiseptic solution, followed by introducing a strip of iodoform gauze well into the deep canal to provide for good drainage, to be renewed every day or two. After the secretions have been removed by inflation, irrigation or a cotton carrier, the surface can be gently dried with cotton and hot air, and then dusted with some impalpable powder. The general health must not be neglected. Absolute rest in bed, with free diuresis and properly conducted diaphoresis, are of the first importance. The bowels should be freely opened and the diet restricted to milk and broth. One or two days of absolute fasting and enforced rest in bed will often do more in prophylaxis than any other single or combined therapeutic measures.—*Medical Record.*

## A NEW AND ORIGINAL STITCH AND METHOD OF CLOSING THE ABDOMINAL WALLS AND OTHER DEEP INCISIONS.

Jacob Michaux takes a suture with a needle on either end, and pierces the peritoneum only on one side, bringing out the needle just under the surface of the rectus muscle (if closing an incision in the median line), passes over the rectus and catches up the aponeurosis. He then lays down needle No. 1, takes up the other and repeats the operation on the other side. The peritoneum and aponeurosis are thus pierced on both sides. The next step is to cross over, taking up the aponeurosis again (with needle No. 1), on the opposite side, carrying the needle through the fat and skin at one thrust. The needle No. 2 is taken across the incision; the aponeurosis pierced as well as the overlying fat and skin on that side. This completes the stitch. The aponeurosis is now pierced twice on each side, thus insuring a firm hold on this important structure, and each thread, as it crosses, must draw the edges of the apneurosis together. Upon the close union of its edges depend the exemption from hernia. The advantages of the procedure are the following: Uniform tension along the walls of incision. Close approximation of edges of aponeurosis. Complete removal of suture after healing. Simplicity.—*Virginia Medical Semi-Monthly.*

The practice of kissing has been pronounced dangerous by certain physicians, who go so far as to say that it should be prohibited by law. It is safer to instruct children to offer their cheeks than their lips to would-be kissers, and to instruct nurses not to allow strangers to kiss their infant charges.

## THE USES AND ABUSES OF VENESECTION IN THE PRACTICE OF MEDICINE.

Robert Reyburn declares that in certain diseases venesection is a valuable therapeutic measure, and in some instances is absolutely necessary to save life. The class of maladies benefited by the abstraction of blood are those in which there is in the body an abnormal blood-pressure threatening the rupture of a vessel in the brain or a stasis of blood in some vital organ. Typical instances are cerebral engorgement, croupous pneumonia and puerperal eclampsia. Attention is called to the increasing death rate in pneumonia. In this disease venesection takes away the surplus blood which is overfilling and engorging the blood vessels of the lung, and also diminishes the force and frequency of the heart, which is sending to the lung far more venous blood than it can purify. Reyburn believes that many cases of threatened puerperal eclampsia can be prevented by timely bleeding. He insists, however, that the field of application of venesection is very definitely limited to the province suggested by the statements in his paper.—*Journal of the American Medical Association, June 6, 1903.*

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A healthy, bright, happy child is a joy in any house, but a spoiled, willful, peevish little tyrant can upset a household and spoil the day for everyone near it. It should be remembered that hardly less important than the physical needs of a child are its moral, intellectual and spiritual needs; yet how often are these almost totally neglected.

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No doctor can afford to be indifferent in the filling of his prescription.

## ANTITOXIN.

Paton (*Australasian Medical Gazette*, April 20, 1902), has used diphtheria antitoxin for septic conditions, giving it internally, and says that its range of action is: "(1) specific for the staphylococcus and streptococcus in all their varieties; (2) specific for simple and traumatic inflammation (whether we regard such inflammation as being a distinct entity or only an attenuated sepsis, diphtheria antitoxin makes no distinction); (3) without parallel in medicine as an absorbent of inflammatory tissues left from the previous mentioned inflammations, 1 and 2, and also of effused blood; (4) that it has considerable influence on the coagulability of blood, and (5) has great power in some depressed nervous conditions probably due to septic conditions acquired or to autotoxemia." Though he cannot say how it acts, he is satisfied that it has a beneficial effect. The gastric secretion, he holds, from such data as he has obtained, has little effect on antitoxin. He believes the oral exhibition of glandular and other organic products, such as thyroid and suprarenal, is sufficiently a parallel to justify the exhibition of antitoxin serum in this way. His formula for using it is given as follows:

℞ Diphtheria antitoxin, 3000 units.
Trag, carmin q. s.
Aq. ad., ℥ ii

M. Sig.: Dose, one-half ounce, (which equals 750 units.)

The time of administration varies from night and morning to every four hours, but the latter is only used in exceptionally severe cases; it is better to give too much than too little. For erysipelas ℥ ss eve ry eight hour

is usually effective. For acute peritonitis and appendicitis ʒ ss at once, ʒ ss in two hours, ʒ ss four hours later, and afterward every six to eight hours, now usually does all that is required. For children the full doses may be given, as the antitoxin is harmless, but usually for small children half the dose is quite effectual. In about 1 per cent. of the cases either a little kidney irritation or skin eruption may be seen, but they are of the most superficial and fleeting character.—*Journal of the American Medical Association.*

## Ophthalmology.

Dr. Albert E. Bulson (Oph. Rec.) reports two cases of purulent corneal ulcer treated with trichloracetic acid. He regards this remedy as superior to carbolic acid or any other caustic, and more efficient than the galvano-cautery or curettage.

Mr. M. S. Mayou (Lancet) uses the X-rays in trachoma with good results. He does not use a mask, but seats the patient about nine inches from the anode, with a moderately soft tube and a current of six amperes for a two minutes' exposure for four to six successive days. In an acute case four will be sufficient. Later he employs it two or three times a week.

Dr. de Schweinitz (Phil. Med. Jour.) quotes Dr. C. F. Clark as saying that retinal hemorrhages are never seen in cases of chlorosis, but says that is not in accord with his experience. He has seen at least two cases of pronounced simple anemia in young patients with retinal hemorrhages. Gowers admits the rarity of hemorrhage in simple anemia, but thinks it may take place.

Dr. Eugene R. Lewis (Annals of Oph.) holds that a lack of binocular vision is more common than is usually supposed. He believes that the only congenital attribute of vision is light perception. All other attributes must be learned. Certain influences prevent many people from ever learning binocular vision. He states that proper measures adopted at the right time will save binocular vision for the patient in many cases.

Dr. Knapp has used euphthalmin hydrochlorate indiscriminately on glaucomatous eyes, but in one case two drops of a 7.5 per cent. solution brought on a more immediate and pronounced attack of glaucoma than he has ever seen follow the instillation of any other mydriatic. Pilocarpin and eserin very quickly reduced the abnormal tension, and an iridectomy was performed. The other eye had absolute glaucoma.

The London School Board has appointed six ophthalmic surgeons to examine its school children. The preliminary test shows that 80 per cent. have normal vision, 10 per cent. fair vision, and in ten per cent. the vision is bad, two or three per cent. being very bad. The bad cases were not due to fine work or poor lighting, but to racial peculiarities and malnutrition.

Dr. Gilbert D. Murray (Annals of Oph.) reports the results of examination in more than 4,000 railroad employes. He found 3.01 per cent. were color blind, 2.58 per cent. had feeble color sense, and 9.44 per cent. were in need of glasses. He believes that the use of tobacco causes acquired color blindness, and suggests

that the employes should have at least eight hours of sleep, as loss of sleep leads to smoking, intemperance and nervous irritability.

Dr. William Rollins (Bos. Med. & Surg. Jour.) cites a number of cases in which the eyes had been injured by working in the X light. One man who had been exposed to the light to a considerable extent since 1896 cannot read the daily papers. He mentions several cases that have contracted cancer while treating the disease by the X-rays, and advises fumigating the room with formalin vapor every night after treating such cases.

Dr. H. Gradle (Oph. Rec.) has used the salicylates in episcleritis with benefit after other remedies have failed. He reports striking effects in superficial corneal infiltrates after trauma. In typical iritis they were of no benefit, but in atypical forms of uncertain duration they were almost specific. He gives large doses, 20 grains, four or five times a day; in some cases 25 grains five or six times a day, until tinnitus is produced. He avoids stomach irritation by using coated five grain tablets.

J. A. T.

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The development of dislikes for this and that sort of food may generally be laid at the parent's door. From mere peevishness, or obstinancy, or a desire to have its own way, many a child develops idiosyncrasies of a harmful sort. A child should early be taught to eat whatever well-prepared food is placed before it, and that the alternative will be to wait until the next meal. This alternative works like a charm, the child generally preferring to eat what its elder prepares for it to going hungry.—*Selected.*

## THE TEMPERANCE MOVEMENT IN RUSSIA.

In connection with the present agitation in and out of the Legislative Assemblies to fight intemperance by the enactment of laws, it may be interesting and instructive to note the effec. of such laws in Russia. Some seven years ago the Russian Government undertook to restrict drunkenness by the establishment of a government monopoly of the sale of intoxicating liquors. Private saloons (*kabaki*) were abolished, and taverns owned and controlled exclusively by the government substituted; the sale of strong drinks was restricted and the price raised; habitual drunkards, intoxicated persons and minors were denied the privilege of obtaining liquor. Beneficial results were confidently expected, and the battle with intemperance looked upon as half won.

That these expectations were not in the least realized is evident from the statistics collated by Prof. Chodsky. It appears that in the thirty-five districts in which the monopoly has been in operation intemperance has actually increased, and the progressive increase is maintained. Instead of 0.91 of a gallon per capita prior to the introduction of the monopoly system, the consumption has increased to 1.05 of a gallon. The expenditure per capita has also increased from 2.42 roubles to 3 roubles. Other effects were the increased consumption of liquor at the homes, the women and children participating in the practice; the enormous increase in the number of speak-easies and increase of drunkenness on the streets and public places. In a word, intemperance has been transferred from the saloons into the homes and the streets, and far from being un-

der control was actually placed beyond the possibility of direct supervision. Human nature is the same, no matter what tongue it speaks, and what has taken place in Russia has occurred and is occurring in our own towns and cities in which local option or prohibition has been introduced. It is well to bear in mind that laws do not improve morals, but laws may make criminals. —*Philadelphia Medical Journal.*

## HYDROPHOBIA IN CHILDREN.

The doctrine that hydrophobia is a disease of the imagination is refuted with great force by the fact that it occurs both in children and in the lower animals, and that it is rapidly fatal in both. Even if this were not so, the fact that the disease is rapidly fatal in the adult ought to convince even a Philadelphia coroner that it is something more than a disease of the imagination, for diseases of the imagination rarely, if ever, kill. In fact, we do not at this writing recall a single instance.

The truth of these facts is painfully brought home by the recent death of the young son of a New York physician from rabies. The case seems to have been an unequivocal one, and the members of the profession everywhere will sympathize deeply with the bereaved father. He has lost his child from an affection which has always been a peculiarly horrifying one, but one which modern science has done much to rob of its terrors. It seems that in this particular case the treatment according to the methods of Pasteur was tried, but failed. Inoculations from the body of the rabid dog gave prompt results in rabbits.

From a case so painful, and so adapted to draw the sympathies of our readers, we have felt it justifiable, in the cause both of science and humanity, to point to the only logical conclusion—a conclusion that seems to require to be illustrated with amazing frequency. That conclusion, of course, is that hydrophobia is not only a disease, but one of the most malignant infections that can assail mankind. And yet in Philadelphia we have a coroner who has abolished hydrophobia by his official fiat.—*Philadelphia Medical Journal.*

## COLLARGOLUM: THE VARIOUS INDICATIONS FOR ITS USE. THE METHODS OF ITS EMPLOYMENT, AND THE MECHANISM OF ITS ACTION.

BY PROF. NETTER, OF THE TROUSSEAU HOSPITAL, PARIS.

Since publishing his first experience with Collargolum, Prof. Netter has used it in over 130 cases, both in the form of Unguentum Crede and by intravenous injection. The latter is used when a quick and energetic action is necessary or when the condition of the skin will not permit the absorption of the ointment. The favorable influence of the medication is not always immediately noticeable and in some cases it must be frequently repeated.

Improvement is manifested in various ways. The most constant and most important phenomenon is the change in the general condition. The patient feels stronger, becomes more animated, losing depression and stupor. Many of the typhoid patients sat up in bed spontaneously, showed interest in their surroundings and

asked for drink and even food. They looked brighter, the cheeks assumed more color, heart beats became more regular and the pulse improved in strength. Even when temperature was not modified the disease lost some of the whole of its infective and typhoid character. These changes occurred with extreme rapidity, often almost instantaneously. Temperature fall took place promptly and definitely, though not in every case. The duration of the disease was often abbreviated and quick convalescence followed.

One of the typhoid cases had intestinal hemorrhages on the twentieth day; but recovery took place in spite of them. Another one, treated with Collargolum, had a relapse. Some very bad cases and some in which treatment was begun too late could not be saved.

Prof. Netter has had extremely satisfactory results in nine pneumonias, nine typhoids, fourteen bronchopneumonias of all kinds, and four severe scarlatinas. In the diphtheria pavilion especially the treatment has given marvellous results in thirty-seven cases; several malignant cases that seemed necessarily fatal were cured. He was also well pleased with the results obtained in a puerperal infection, in one infectious and in one rheumatic endocarditis. He cannot sufficiently recommend the employment of intravenous Collargolum injections in acute endocarditis, from any cause, following Wenckebach. In two cases of pulmonary tuberculosis in the third stage and in six cases of tubercular meningitis no results were obtained.

Prof. Netter does not entirely attribute the action of Collargolum to its antibacterial properties. He believes that its catalytic power is of even greater importance and shows that all the colloidal metals are powerful catalysators. What the modifications of the blood are which the colloidal silver produces, Prof. Netter is not yet prepared to say. Analogy and hypothesis alone are at present available. Experimentation, though surrounded by difficulties, will doubtless furnish direct proofs, and will he hopes, permit us to markedly enlarge the great field of therapeutic application for Collargolum.—Abstracted from the *Bulletins et Mémoires de la Societe Medicale des Hospitaux de Paris*, January 22, 1903.

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than the cost of manufacturing the genuine Colchi-Sal, which in itself is suspicious, in view of the fact that the value of natural methyl-salicylate (from betula lenta) has materially increased and that of pure crystalline colchicine used in its manufacture, is more than 600 times greater than when the formula of Colchi-Sal was first brought before the notice of the medical profession. The published formula merely indicates the basis on which it is made and does not explain manufacturing details on which the peculiar physiological effect depends.

Colchi-Sal capsules are naturally green, and all substitutes are therefore colored green, so that the substitution is only detected by its failure to give the full benefits to which practitioners are accustomed. In order then to obtain satisfaction, physicians should prescribe "original packages" of 50 or 100 capsules of Colchi Sal bearing the name of the agents, E. Fougera & Co., New York.

Many physicians object to this no doubt, but unless it is done, no blame can be attached to Colchi-Sal (or its published formula), which has proved so remarkably prompt to relieve pain and to stimulate the increased secretion of the solvent principle of uric acid, thus preventing further precipitation in the tissues and consequent inflammatory conditions, besides resolving tophi resulting from previous pathological phenomena.

If therefore the patient does not obtain relief after its exhibition, it is advisable to look carefully into the origin of the capsules.

No physician can afford to be indifferent in the filling of his prescriptions.

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